

JFW

**TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
(Under 37 CFR 1.97(b) or 1.97(c))**

Docket No.
Orb-023

In Re Application Of: **John DiCocco et al**

Serial No.	Filing Date	Examiner	Group Art Unit
10/750422			

Title: **Aircraft and Missile Afterbody Flow Control Device and Method of Controlling Flow**



Address to:
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

37 CFR 1.97(b)

1. The Information Disclosure Statement submitted herewith is being filed within three months of the filing of a national application other than a continued prosecution application under 37 CFR 1.53(d); within three months of the date of entry of the national stage as set forth in 37 CFR 1.491 in an international application; before the mailing of a first Office Action on the merits, or before the mailing of a first Office Action after the filing of a request for continued examination under 37 CFR 1.114.

37 CFR 1.97(c)

2. The Information Disclosure Statement submitted herewith is being filed after the period specified in 37 CFR 1.97(b), provided that the Information Disclosure Statement is filed before the mailing date of a Final Action under 37 CFR 1.113, a Notice of Allowance under 37 CFR 1.311, or an Action that otherwise closes prosecution in the application, and is accompanied by one of:

the statement specified in 37 CFR 1.97(e);

OR

the fee set forth in 37 CFR 1.17(p).

TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT
(Under 37 CFR 1.97(b) or 1.97(c))

Docket No.
Orb-023

In Re Application: John DiCocco et al

Serial No.
10/750422

Filing Date

Examiner

Group Art Unit

Aircraft and Missile Afterbody Flow Control Device and Method of Controlling Flow



Payment of Fee

(Only complete if Applicant elects to pay the fee set forth in 37 CFR 1.17(p))

- A check in the amount of _____ is attached.
- The Director is hereby authorized to charge and credit Deposit Account No. _____ as described below.
 - Charge the amount of _____
 - Credit any overpayment.
 - Charge any additional fee required.

Certificate of Transmission by Facsimile*

I certify that this document and authorization to charge deposit account is being facsimile transmitted to the United States Patent and Trademark Office (F:

(Date)

Signature

Typed or Printed Name of Person Signing Certificate

Certificate of Mailing by First Class Mail

I certify that this document and fee is being deposited on 06/29/2004 with the U.S. Postal Service as first class mail under 37 C.F.R. 1.8 and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

A handwritten signature in black ink, appearing to read "Samuel Seth Weis".

Signature of Person Mailing Correspondence

Samuel Seth Weis

Typed or Printed Name of Person Mailing Certificate

*This certificate may only be used if paying by deposit account.

A handwritten signature in black ink, appearing to read "Samuel Seth Weis".

Signature

Dated:

06/29/2004

CC:



Practitioner's Docket No. ORB-023

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Patent application

of John DiCocco, Troy Prince, Mehul Patel, & Terry Ng

Inventor(s)

for Aircraft and Missile Afterbody Flow Control Device and Method of Controlling Flow

Title of invention

the specification of which is being transmitted herewith

OR

In re application of:

Serial No.: 0 10 / 750422

Group No.:

Filed:

Examiner:

For: Orbital Research, Inc.

Assistant Commissioner for Patents
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

CERTIFICATION UNDER 37 C.F.R. 1.8(a) and 1.10*

(When using Express Mail, the Express Mail label number is mandatory;
Express Mail certification is optional.)

I hereby certify that, on the date shown below, this correspondence is being:

MAILING

deposited with the United States Postal Service in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231
37 C.F.R. 1.8(a) 37 C.F.R. 1.10*

with sufficient postage as first class mail. as "Express Mail Post Office to Addressee"

Mailing Label No. _____ (mandatory.)

TRANSMISSION

transmitted by facsimile to the Patent and Trademark Office.

Signature

Date: _____

Seth Weis

(type or print name of person certifying)

*WARNING: Each paper or fee filed by Express Mail must have the number of the "Express Mail" mailing label placed thereon prior to mailing. 37 C.F.R. 1.10(b).

*Since the filing of correspondence under § 1.10 without the Express Mail mailing label thereon is an oversight that can be avoided by the exercise of reasonable care, requests for waiver of this requirement will not be granted on petition. Notice of Oct. 24, 1996, 60 Fed. Reg. 56,439, at 56,442.

(Information Disclosure Statement [6-1]—page 1 of 9)

NOTE: "An information disclosure statement shall be considered by the Office if filed by the applicant:

- (1) Within three months of the filing date of a national application;
- (2) Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application; or
- (3) Before the mailing date of a first Office action on the merits, whichever event occurs last."

37 C.F.R. 1.97(b).

NOTE: "Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section." 37 C.F.R. 1.56(a).

"Individuals associated with the filing or prosecution of a patent application within the meaning of this section are:

- (1) each inventor named in the application;
- (2) each attorney or agent who prepares or prosecutes the application; and
- (3) every other person who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application." 37 C.F.R. 1.56(c).

NOTE: The "duty as described in § 1.56 will be met so long as the information in question was cited by the Office or submitted to the Office in the manner prescribed by §§ 1.97(b) - (d) and 1.98 before issuance of the patent." Notice of January 9, 1992, 1135 O.G. 13 -25 at 17.

WARNING: "No information disclosure statement may be filed in a provisional application." 37 C.F.R. § 1.51(b).

List of Sections Forming Part of This Information Disclosure Statement

The following sections are being submitted for this Information Disclosure Statement:

(check sections forming a part of this statement: discard unused sections
and number pages consecutively)

1. Preliminary Statements
2. FORMS PTO/SB/08A and 08B (formerly FORM PTO-1449)
3. Statement as to Information Not Found in Patents or Publications
4. Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted
5. Cumulative Patents or Publications
6. Copies of Listed Information Items Accompanying This Statement
7. Concise Explanation of Non-English Language Listed Information Items
 - 7A. EPO Search Report
 - 7B. English Language Version of EPO Search Report
8. Translation(s) of Non-English Language Documents
9. Concise Explanation of English Language Listed Information Items (Optional)
10. Identification of Person(s) Making This Information Disclosure Statement

(complete the following, if appropriate)

Sections _____, respectively, have been continued on ADDED PAGE(S).

NOTE: "Once the minimum requirements are met, the examiner has an obligation to consider the information." Notice of April 20, 1992 (1138 O.G. 37-41, 37).

Section 1. Preliminary statements

Applicants submit herewith patents, publications or other information, of which they are aware that they believe may be material to the examination of this application, and in respect of which, there may be a duty to disclose.

The filing of this information disclosure statement shall not be construed as a representation that a search has been made (37 C.F.R. 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this information disclosure statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

Section 2. Forms PTO/SB/08A and 08B (formerly Form PTO-1449)

NOTE: With respect to the list required by paragraph (b) of 37 C.F.R. 1.98, the Notice of April 20, 1992 (1138 O.G. 37-41) points out that:

"The list may not be incorporated into the specification but must be submitted in a separate paper. A separate list is required so that it is easy to confirm that applicant intends to submit an information disclosure statement, and because it provides a readily available checklist for the examiner to indicate which identified documents have been considered. A copy of a separate list will also provide a simple means of communication to applicant to indicate the listed documents that have been considered and those listed documents that have not been considered. Use of form PTO-1449, "Information Disclosure Citation, is encouraged."

NOTE: "An information disclosure statement may include two list[s (and two certifications)] . . . in situations where some of the information listed was cited in a communication from a foreign patent office not more than three months prior to filing the statement and some was not, but was not known more than three months prior to filing the statement." Notice of April 20, 1992 (1138 O.G. 37-41, 40).

NOTE: With respect to the examiner's consideration of the Information Disclosure Statement, the Notice of April 20, 1992 (1138 O.G. 37-41) states:

"If information is listed in the specification rather than in a separate paper, or if the other content requirements *** are not complied with, the examiner will notify applicant in the next Office action that the information has not been considered. It should be noted, however, that no copy of a U.S. patent application is required to be submitted. *** Where a U.S. patent application is properly cited, the examiner should obtain access to that file within the Office.

"Examiners must consider all citations submitted in conformance with the rules and this section and place their initials adjacent [sic] the citations on a list or in the boxes provided on a form PTO-1449. If the citations are submitted on a list other than a form PTO-1449, the examiner may write "all considered" and his or her initials to indicate that all citations have been considered. If any of the citations are considered, a copy of the submitted list or form, as reviewed by the examiner, will be returned to the applicant with the next communication. The original copy of the form will be entered into the application file. The copy returned to applicant will serve both as acknowledgement of receipt of the information disclosure statement and as an indication that the references were considered by the examiner. Forms PTO-326 and PTOL-37 include a box to indicate the attachment of form PTO-1449.

"Information which complies with requirements as discussed in this section but which is in a non-English language will be considered in view of the concise explanation submitted *** and insofar as it is understood on its face, e.g., drawings, chemical formulas, in the same manner that non-English language information in Office search files is considered by examiners in conducting searches. The examiner need not have the information translated unless it appears to be necessary to do so. *** The examiner should not require that a translation be filed by applicant. The examiner should not make any comment such as that the non-English language information has only been considered to the extent understood, since this fact is inherent.

"Since information is required to be listed in a separate paper rather than in the specification, there is no need to mark "All checked" or "Checked" in the margin of a specification containing citations.

"If a statement fails to comply with the requirements as discussed in this section for an item of information, a line should be drawn through the citation to show that it has not been considered. The other items of information listed that do comply with the rules and this section will be considered by the examiner and will be appropriately initialed.

* * * * *

"A citation listed on form PTO-1449 and considered by the examiner in accordance with this section will be printed on the patent. A citation listed in a separate paper, equivalent to but not on form PTO-1449, and considered by the examiner in accordance with this section will be printed on the patent if the list is on a separate sheet which is clearly identified as an information disclosure statement and the list lends itself to easy capture of the necessary information by the Office printing contractor, i.e., each item of information is listed on a single line, the lines are at least double-spaced from each other, the information is uniform in format for each listed item, the list includes a column for the examiner's initials to indicate that the information was considered. If a citation is not printed on the patent but has been considered by the examiner in accordance with this section, the patented file will reflect that fact . . . "



Please type a plus sign (+) inside this box →

PTO/SB/08A (10-95)

Approved for use through 10/31/99. OMB 0651-0031
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO				Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	10/750,422
				Filing Date	
				First Named Inventor	DiCocco et al
				Group Art Unit	
				Examiner Name	
				Attorney Docket Number	ORB-023
Sheet	1	of	2		
(use as many sheets as necessary)					

U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

Examiner Signature		Date Considered	
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***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached *Kinds of U.S. Patent Documents*. ³ Enter Office that issued the document, by the two-letter code (*WPO Standard ST.3*). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbol as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language *Translatabilis* is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

(Information Disclosure Statement—Section 2, FORM 1449A/PTO (PTO/SB/08A) [6-1] — page 5 of 9)



PTO/SB/08B (08-03)

Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO				Complete if Known	
				Application Number	10/750,422
				Filing Date	
				First Named Inventor	DiCocco et al
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	ORB-023

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Mehul Patel, Richard Kolacinski, & Troy Prince; Flow Control Using Intelligent Control Modules for Virtual Aerodynamic Shaping; AIAA 2003-3663; 21st AIAA Applied Aerodynamics Conference 23-26 June 2003, Orlando FL; pp. 1-15.	✓
		Mehul Patel, Jack DiCocco, & Troy Prince; Afterbody Flow Control for Low Alpha Missile Maneuvering; AIAA 2003-3673; 21st AIAA Applied Aerodynamics Conference 23-26 June 2003, pp. 1-11.	✓
		Mehul Patel, Terry Ng, Alan Cain; A CFD Study of a Missile Aero Control Fin by Near-Wall Flow Modifications; AIAA 2003-0547; 41st Aerospace Sciences Meeting and Exhibit 6-9 January 2003, Reno NV, pp.1-11.	✓
		Mehul Patel, Terry Ng, Jack DiCocco, & Troy Prince; Flow Control Using Reconfigurable Porosity; AIAA 2003-3665; 21st AIAA Applied Aerodynamics Conference 23-26 June 2003, pp. 1-11.	✓
		Mehul Patel, Terry Ng, Reed Carver, Jack DiCocco, & Troy Prince; Deployable Flow Effectors for Phantom Yaw Control of Missiles at High Alpha; 1st AIAA Flow Control Conference 24-26 June 2002, St. Louis, MO; pp. 1-12	
		J.E. Bernhardt and D.R. Williams; Closed Loop Control of Forebody Flow Asymmetry; Journal of Aircraft Vol. 27, No. 3; May-June 2000; pp 491-498.	
		Lisa Barke, John Frate, and David Fisher; A Summary of the Forebody High-Angle-of-Attack Aerodynamics Research on the F-18 and the X-29A Aircraft; NASA Technical Memorandum, November 1992; pp. 1-17.	
		David Fisher and Daniel Murri; Forebody Flow Visualization on the F-18A HARV with Actuated Forebody Strakes; NASA Technical Memorandum, September 1998; pp. 1-10.	
		Lars Ericsson and Martin Breyers; Forebody Flow Control at Conditions of Naturally Occurring Separation Asymmetry; Journal of Aircraft, Vol 39, No. 2, March-April 2002; pp 252-261.	
		L.E. Ericsson and J.P. Reding; Asymmetric Flow Separation and Vortex Shedding on Bodies of Revolution; From: Tactical Missile Aerodynamics; General Topics Edited by Michael J. Hemsch; Vol 141, Chapter No. 10; 1989; pp. 391-401.	

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO:
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Section 4. Identification of Prior Application in Which Listed Information Was Already Cited and for Which No Copies Are Submitted or Need Be Submitted

NOTE: "A copy of any patent, publication or other information listed in an information disclosure statement is not required to be provided if it was previously cited by or submitted to the Office in a prior application, provided that the prior application is properly identified in the statement and relied upon for an earlier filing date under 35 U.S.C. 120." 37 C.F.R. 1.98(d).

WARNING: "This exception to the requirement for copies of information does not apply to information which was cited in an international application under the Patent Cooperation Treaty." Notice of April 20, 1992 (1138 O.G. 37-41, 38).

WARNING: "Information which is cited or submitted to the Office in the parent application of a file wrapper continuing application under 37 C.F.R. 1.62 will be part of the file before the examiner and need not be resubmitted in the continuing application. Likewise, the examiner will consider information cited or submitted to the Office in a parent application when examining a continuing application and thus this information need not be resubmitted unless applicant desires the information to be printed on the patent." Notice of April 20, 1992 (1138 O.G. 37-41, 37).

WARNING: While a copy of a non-English language item of information need not be submitted, if it was previously submitted to, or cited by, the Office in a prior application, provided it is properly identified in this statement and this application relies on that earlier filing date under 35 U.S.C. 120, nevertheless, the requirement in § 1.98(a)(3) for a concise explanation of non-English language information would not be satisfied by a statement that a reference was cited in the prosecution of a parent application. The concise explanation must explain the relevance, as presently understood by the person designated in § 1.56(c) most knowledgeable about the content of the information. Notice of January 9, 1992, 1135 O.G. 13-25, at 20.

This application relies, under 35 U.S.C. 120, on the earlier filing date of prior application SN.: 0 10 /336,117 , filed on 01/03/2003 (date).

(complete the following, if applicable)

This application also relies, under 35 U.S.C. 120, on the earlier filing date of prior application SN.: 0 / , filed on _____ (date).

The following references were submitted to, and/or cited by, the Office in the prior application(s) and, therefore, are not required to be provided in this application:

US Patents from 10/336,117: 4,917,333; 5,755,408; 6,105,904

Publications from 10/336,117:

- Mehul Patel, Terry Ng, Reed Carver, Jack DiCocco, & Troy Prince; Deployable Flow Effectors for Phantom Yaw Control of Missiles at High Alpha; 1st AIAA Flow Control Conference 24-26 June 2002, St. Louis, MO; pp. 1-12.
- J.E. Bernhardt and D.R. Williams; Closed Loop Control of Forebody Flow Asymmetry; Journal of Aircraft Vol. 27, No. 3; May-June 2000; pp 491-498.
- Lisa Bärke, John Frate, and David Fisher; A Summary of the Forebody High-Angle-of-Attack Aerodynamics Research on the F-18 and the X-29A Aircraft; NASA Technical Memorandum, November 1992; pp. 1-17.
- David Fisher and Daniel Murri; Forebody Flow Visualization on the F-18A HARV with Actuated Forebody Strakes; NASA Technical Memorandum, September 1998; pp. 1-10.
- Lars Ericsson and Martin Breyers; Forebody Flow Control at Conditions of Naturally Occurring Separation Asymmetry; Journal of Aircraft, Vol 39, No. 2, March-April 2002; pp 252-261.
- Lars Ericsson and Martin Breyers; Forebody Flow Control at Conditions of Naturally Occurring Separation Asymmetry; Journal of Aircraft, Vol 39, No. 2, March-April 2002; pp 252-261.
- L.E. Ericsson and J.P. Reding; Asymmetric Flow Separation and Vortex Shedding on Bodies of Revolution; From: Tactical Missile Aerodynamics; General Topics Edited by Michael J. Hemsch; Vol 141, Chapter No. 10; 1989; pp. 391-401.

(Information Disclosure Statement — Section 4. Identification of Prior Application in Which Listed Information Was Already Submitted and for Which No Copies Are Submitted or Need Be Submitted
[6-1]—page _____ of 9)

Section 6. Copies of Listed Information Items Accompanying This Statement

NOTE: 37 C.F.R. 1.98(a)(2) requires that any information disclosure statement filed under § 1.97 shall include: "A legible copy of: (1) Each U.S. and foreign patent; (ii) Each publication or that portion which caused it to be listed; and (iii) All other information or that portion which caused it to be listed, except that no copy of a U.S. patent application need be included . . . "

NOTE: The wording in § 1.98(a)(2)(iii) makes it clear that the requirement to submit a copy of each item of information listed in an information disclosure statement does not apply to the citation of a U.S. patent application. Notice of January 9, 1992, 1135 O.G. 13-25, at 14.

Legible copies of all items listed in Forms PTO/SB/08A and 08B (formerly Form PTO-1449) accompany this information statement.

(complete the following, if applicable)

- Exception(s) to above:
 - Items in prior application, from which an earlier filing date is claimed for this application, as identified in Section 4.
 - Cumulative patents or publications identified in Section 5.

Section 10. Identification of Person(s) Making This Information Disclosure Statement

The person making this statement is

(check each applicable item)

(a) the inventor(s) who signs below

SIGNATURE OF INVENTOR

(type name of inventor who is signing)

(b) an individual associated with the filing and prosecution of this application (37 C.F.R. 1.56(c))

SIGNATURE OF INVENTOR

(type name of inventor who is signing)

(c) the practitioner who signs below on the basis of the information:

(check each applicable item)

- supplied by the inventor(s).
- supplied by an individual associated with the filing and prosecution of this application (37 C.F.R. 1.56(c))
- in the practitioner's file.



SIGNATURE OF PRACTITIONER

Reg. No.: 36,847

Brian M. Kolkowski

Tel. No.: (216) 649-0376

(type or print name of practitioner)

Customer No.:

4415 Euclid Ave, Suite 500

P.O. Address

Cleveland, OH 44103